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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
| 10/562,117 | 12/23/2005 | Jonathan A. Price | 124-1140 | 1233 |
| 23117 | 7590 | 09/30/2008 | EXAMINER | |
| NIXON & VANDERHYE, PC | | | MUSSER, BARBARA J | |
| 901 NORTH GLEBE ROAD, 11TH FLOOR | | | ART UNIT | PAPER NUMBER |
| ARLINGTON, VA 22203 | | | 1791 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | |
|------------------------------|--------------------------------------|-------------------------------------|
| Office Action Summary | Application No. 10/562,117 | Applicant(s) PRICE ET AL. |
| | Examiner BARBARA J. MUSSER | Art Unit 1791 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8,18,19,25,29-31,33-36,39,40 and 43 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
 5) Claim(s) ____ is/are allowed.
 6) Claim(s) 1-8,18,19,25,29-31,33-36,39,40 and 43 is/are rejected.
 7) Claim(s) ____ is/are objected to.
 8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date 12/23/05, 1/10/06, 6/01/06
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 29-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 29 recites the limitation "the second pre-formed energy dispersive layer" in line 1. There is insufficient antecedent basis for this limitation in the claim. For the purposes of examination, these claims are considered to depend from claim 19 which includes a second energy dispersive layer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-8, 39, and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brine et al.(EP 0650333B1) in view of Wilson(U.S. Patent 6,401,258).

Brine et al. discloses a method of making a helmet comprising introducing a first fabric layer into a mold, introducing a performed energy dispersive material into the mold, and introducing a third layer made of a fabric into the mold.(Col. 2, II. 15-Col. 3, II. 5) Resin is applied to fabric which is then cured. The reference does not disclose using

an energy dispersive material which is shaped to its desired shape prior to placement in the mold. Wilson(Col. 2, ll. 59-63; Figure 3) discloses pre-forming at least the energy dispersive layer to the final shape and then placing all the layers together into the mold where the helmet is formed. It would have been obvious to one of ordinary skill in the art at the time the invention was made to pre-form the energy dispersive layer to the final shape prior to placement in the mold since this is a known alternative method of placing an energy dispersive material in a helmet.

Regarding claims 3 and 5, one in the art would appreciate that some of the layers could be temporarily bonded(tacked) together prior to placement in the mold to insure accurate placement of the layers relative to one another and would do so for this reason.

Regarding claim 4, since Brine et al. discloses the strips of fabric are pressed into the resin, the resin must be deposited in the mold prior to placement of the fabric.(Col. 2, ll. 29-30)

Regarding claim 6, if the third layer is tacked to the second layer as suggested above, it would still require addition of resin to form the desired structure.

Regarding claim 7, since the resin is flowable, one in the art would appreciate it would be applied when the third layer is in the mold so the resin does not drip off the third layer and contaminate surrounding surfaces.

Regarding claim 8, Brine et al. discloses the fabric layers can be made of 3 layers each.(Col. 2, ll. 33)

Regarding claim 40, one in the art would appreciate that the helmet would incorporate a mounting for a visor since the presence of a visor is well-known and conventional in a helmet.

6. Claims 18, 19, 25, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brine et al. and Wilson as applied to claim 1 above, and further in view of Bothwell et al.(GB 1,173,275) and Foreman et al.(Design, Manufacture, and Test of Lightweight Composite Sandwich Helmets)

The references cited above do not disclose a second energy dispersive layer or a fifth comfort layer on the energy dispersive layer. Bothwell et al. discloses a helmet having a second energy dispersive layer(16) and a comfort liner(17). Foreman et al. disclose that a second soft energy dispersive liner is needed to absorb energy from low energy impacts while the first layer absorbs the energy from high energy impacts.(Page 8) It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a second softer energy dispersive layer and a comfort liner in the helmet of Brine et al. and Wilson since this would absorb energy from low energy impacts while the first layer absorbs the energy from high energy impacts as suggested by Foreman et al.

7. Claims 29-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brine et al. and Wilson as applied to claim 1 above, and further in view of Wallace.(US Patent 4,972,527).

While Wilson discloses a helmet with the same size opening as the widest part of the helmet, helmets can be made that curve inward so that the opening is smaller than

the wider part of the helmet as shown for example by Brine et al.(Figures 5-7) In order to place the second dispersive layer into the helmet, it must either be flexible enough to be bent into the helmet opening or it must be in pieces which are assembled in the helmet. One in the art would appreciate these are obvious alternatives ways of making an article fit through an opening it is too small for and would use one of these methods. After placement in the helmet, the parts would necessarily have to interconnect to prevent them from moving relative to one another. Wallace discloses several types of interconnections for energy dispersive layers known in the helmet arts, including tongue and groove.(Figure 10) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any known method of interconnecting parts to interconnect energy dispersive sections in Brine et al. and Wilson such as tongue and groove since Wallace shows that such interconnection are known in the helmet arts.

8. Claims 33-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brine et al. and Wilson as applied to claim 1 above, and further in view of Wagner(DE 3837189A1).

The references cited above do not disclose a barrier layer between the first energy dispersive layer and either of the fabric layers. Wagner discloses placing an epoxy layer between a foam layer and a resin to prevent the properties of one materials from affecting those of the other.(Abstract) It would have been obvious to one of ordinary skill in the art at the time the invention was made to place a layer of epoxy resin between the first energy dispersive layer and the fabric layers so the resin in the

fabric would not affect the properties of the resin forming the foam as suggested by Wagner.(Abstract)

Regarding claim 34, the use of colored die to monitor the application of a material is well-known in general as shown for example by the pink dye applied to ceiling paint to monitor its application and it would have been obvious to use it for this reason.

Regarding claim 35, spraying, dipping, and brushing are well-known methods of applying a coating and it would have been obvious to use one of these methods for that reason.

Regarding claim 36, since the barrier material is intended to prevent the foam and resin in the fabric from coming into contact, one in the art would appreciate it would be impervious to the resin and cover the entire surface uniformly since a non-uniform coating would waste resin.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BARBARA J. MUSSER whose telephone number is (571)272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BJM
/B. J. M./
Examiner, Art Unit 1791

/Richard Crispino/
Supervisory Patent Examiner, Art Unit 1791